

### **3 DESIGN REQUIREMENTS**

#### **3.1 General Design Requirements**

Design-Build Contractor shall provide all necessary services to design all permanent and temporary portions of the Project. All Work shall conform to current INDOT and AASHTO standards, practices, policies, guidelines, and specifications.

Only design firms that are prequalified with INDOT for the Work types specified, and that are sufficiently staffed and capable of performing the required Work, shall be used on the Project's Design-Build Contractor team. The required capabilities include successful completion of designs for major road and bridge projects. Design-Build Contractor's design firms will be considered as Subcontractors responsible for the design and engineering of the Project. Multiple design firms may work on Design-Build Contractor team; however, one design firm shall be designated as the prime design firm. Design-Build Contractor shall assign professional engineers and surveyors licensed in the State of Indiana to be in direct responsible charge of all engineering and surveying Work. If services are required that are predominantly oriented toward other disciplines, such as environmental, landscaping, transportation planning, or architectural applications, Design-Build Contractor shall assign other professionally competent personnel registered or licensed in the State of Indiana to be in charge of the applicable Work.

Plans shall be developed in accordance with INDOT's plan preparation guidelines, with the exception that only Stage 1, Stage 3, and Released for Construction Documents will be required for submission. Release for Construction Documents shall be signed and stamped by a Registered Professional Engineer. Design-Build Contractor must include a transmittal letter with a comprehensive list of what is included with every Submittal. File naming convention must follow INDOT requirements. Electronic files in Portable Document Format (PDF) shall be submitted on the INDOT Project website.

#### **3.2 Specific Design Requirements**

Design-Build Contractor shall:

1. Consult with INDOT to understand INDOT's requirements for the Project and review all available data.
2. Use English Units for preparation of Plans and Submittals.
3. Provide remaining Utility coordination, geotechnical investigation, engineering, design, Rule 5 NOI, necessary permits or permit revisions, as-built plans, and necessary items to construct the Project complete and in place.
4. Maintain and make available to INDOT, upon request, a project record that includes a history of significant events including changes and comments that influenced the development of the Project.
5. Perform additional surveys required for the Project. Design-Build Contractor shall be responsible for additional survey required and any updates to the design related to the changes to the topographic survey related to these projects.
6. Perform additional test borings, geotechnical investigations, and appropriate analysis, including global stability, to produce the proposed design. Submit a Geotechnical Design

Report, prepared by Design-Build Contractor's Geotechnical Registered Professional Engineer, presenting the results of all additional investigations, and modifications or additions to the Geotechnical Data Report provided by INDOT. The geotechnical investigation shall be in accordance with the current version of the INDOT Geotechnical Manual. The review shall be documented in the Geotechnical Design Report and shall be submitted to the Office of Geotechnical Services for review and approval.

7. Provide video documentation of the existing condition of all routes being utilized as a result of the Maintenance of Traffic plan.

### **3.3 Design Criteria**

The Project shall comply with the Project Standards shown in Attachment 3-1 (Applicable Standards), unless otherwise noted in the Technical Provisions. INDOT's standards, practices, policies, guidelines and specifications shall control in case of a conflict among Project Standards, except for erosion control measures in which the IDEM Indiana Stormwater Quality Manual shall control in case of conflict.

### **3.4 Design Workshop**

A Design Workshop shall be planned and scheduled before Design Work commences. A draft schedule and agenda shall be submitted to INDOT for review and comment prior to the Design Workshop. The goal of the Design Workshop is to familiarize the Designer's personnel and INDOT review personnel with the design concepts, issues, status, and review procedures, with the intent of making the subsequent Design Reviews more effective and efficient for all parties. The agenda of the Design Workshop and how it is organized (e.g., by Submittals and engineering discipline) shall be jointly developed by INDOT and Design Build Contractor.

At the Design Workshop, an agreement regarding time provided in the schedule for Design Reviews shall be established. The duration of Design Reviews may vary depending on items such as the stage of the design development, the size of the review package, the complexity of the subject for review, potential environmental implications, public safety concerns, and the need for third-party review. The agenda shall include time for a discussion of the necessary Environmental Approvals, permitting processes, review times, and strategy for the mitigation of potential delays. These issues and specified review times shall be considered within the Project Baseline Schedule.

All agreements, schedules, and understandings reached during the Design Workshop shall be documented and submitted for approval by Design-Build Contractor's Project Manager and INDOT.

### **3.5 Deliverables**

Deliverables, a non-exhaustive list of which is set forth in the table below, shall be submitted in electronic format in accordance with the schedule set forth below. Acceptable electronic formats include PDF and current versions of Microsoft Word and Microsoft Excel, unless otherwise indicated.

TECHNICAL PROVISIONS – Section 3  
Design Requirements

<b>Deliverable</b>	<b>Submittal Schedule</b>	<b>TP Section</b>
Stage 1 Plans	As required	3.1
Stage 3 Plans	As required	3.1
Released for Construction Plans	As required	3.1